

Application No. 10/502,083  
Amendment dated June 5, 2006  
Reply to Office Action of February 3, 2006

Docket No.: 12810-00046-US

### **REMARKS**

After entry of this amendment, claims 2-25 are pending. Claim 1 is cancelled without prejudice or disclaimer. Claims 2 and 9 are amended without prejudice. The basis for said amendment is found on page 4, lines 18 to 28 of the specification. Claims 5, 6, 9, 19, and 22-24 are amended without prejudice to correct obvious inadvertent errors and to replace reference to cancelled claim 1 with claim 2. Support is found inter alia at page 4, line 22. No new matter has been added.

### **Objections**

Applicants wish to thank the Examiner for pointing out the typographic errors in claims 1 and 9. Applicants amended the claims accordingly and respectfully request the objections be withdrawn.

### **Claim Rejections According to 35 U.S.C. § 112, First Paragraph**

#### **(a) Claims 1, 6-11 and 22-25**

Claims 1, 6-11 and 22-25 were rejected for lack of written description support. In the present amendment, Applicants cancelled the originally presented claim 1 and combined the subject matter therein with currently amended claim 2. As claim 2 was not rejected for written description grounds this amendment is believed to render the rejection moot.

#### **(b) Claims 1-4, 6-11 and 22-25**

Claims 1-4, 6-11 and 22-25 stand rejected for lack of enablement.

Applicants respectfully disagree. Although the rejected claims encompass homologs of SEQ ID NO.:1, the skilled artisan in this art is very highly educated (a Ph.D. with several years of genomic experience) and the specification provides guidance on identifying homologs.

Applicants respectfully submit that claim 2 and its direct- or indirect-dependent claims (3-4, 6-11, and 22-25, as presently submitted), satisfy the requirements of 35 U.S.C. 112, first paragraph for following reasons.

First, the specification teaches a skilled artisan to obtain sequences having the desired elongase activity by hybridization or by polymerase chain reaction (PCR) (page 28, lines 4 to 34).

Application No. 10/502,083  
Amendment dated June 5, 2006  
Reply to Office Action of February 3, 2006

Docket No.: 12810-00046-US

For hybridization, the specification teaches that the complete SEQ ID NO:1 or part thereof can be used as probes (page 28, lines 9 to 10) of various length (15, 25, 50, 100, 250 or more) under stringent conditions (page 32, line 40 to page 34, line 9). For PCR, the specification teaches that the use of the regions around His-Box motif as oligonucleotide primers is particularly useful (page 28, lines 14 to 19). Specific primers, useful for the isolation of the inventive nucleic acid sequences are disclosed in the examples on page 66, lines 20 to 22 and on page 74, lines 1 to 3.

The sequences thus obtained can be readily assessed for the desired elongase activity as described in detail in Example 13 of the specification.

Additionally, the specification describes on page 35 a general method to modify SEQ ID NO:1 and likely obtain a sequence encoding a protein having the recited enzyme activity. Page 35 teaches that mutations can be introduced into SEQ ID NO: 1 by standard techniques such as site-directed mutagenesis and PCR-mediated mutagenesis. Page 35, lines 31-34. Preferably, conservative amino acid substitutions are generated at one or more of the predicted nonessential amino acid residues. Page 35, lines 34-36. Also, the specification teaches that mutations can be introduced randomly, such as by saturation mutagenesis, and the resulting mutants can be screened for enzyme activity such as by using the activity measures shown in the examples to identify mutants that retain activity. Page 36, lines 4-13.

Moreover, the specification provides a specific example for generating such modifications by mutagenesis (page 69, line 40 to page 70, line 10). Thus, the specification provides sufficient guidance for an ordinary skilled artisan to be enabled to practice the full scope of the claimed invention.

Applicants respectfully request, in view of the foregoing, that the rejections based on 35 U.S.C. §112, first paragraph be withdrawn.

Application No. 10/502,083  
Amendment dated June 5, 2006  
Reply to Office Action of February 3, 2006

Docket No.: 12810-00046-US

**Claim Rejections According to 35 U.S.C. § 102**

Previously presented claims 1, 6-11 and 22-23 were rejected as being anticipated by Wallis et al. (Trends in Biochemical Sci., 2002, vol. 27 pp 467-473), Napier et al. (US App. No. 2005/0089981) or Mukerji et al. (US Pat. No. 6,913,916).

Claim 1 is now cancelled. The remaining claims depend directly or indirectly from claim 2 and claim 9, which was amended to recite the elements of claim 2.

Claim 2 was not rejected over the art. In sum, these amendments are believed to render the anticipation rejections moot.

Applicants respectfully request, in view of the foregoing, that the rejection based on 35 U.S.C. §102 be withdrawn.

**Conclusion**

In view of the above amendment, applicants believe the pending application is in condition for allowance.

Applicants hereby petition for a one month extension of time to and including June 5, 2006 (June 3 is a Saturday) to respond to the Office Action mailed February 3, 2006 with the required fee authorization.

Application No. 10/502,083  
Amendment dated June 5, 2006  
Reply to Office Action of February 3, 2006

Docket No.: 12810-00046-US

Applicants believe no other fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00046-US from which the undersigned is authorized to draw.

Respectfully submitted,

By 

Zhun Lu, Ph.D.

Registration No.: 53,242  
CONNOLLY BOVE LODGE & HUTZ LLP  
1007 North Orange Street  
P.O. Box 2207  
Wilmington, Delaware 19899  
(302) 658-9141  
(302) 658-5614 (Fax)  
Attorney for Applicants

468133